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Page

Progress along the Lines Recommended by the National Nutrition Conference	
In Scientific Basis for a National Nutrition Program (Recommendations A, B, and C) - - - - -	1
In Education of Professional Personnel (Recommendation D) - - - - -	6
In Popular Education (Recommendations E and F) - - - - -	10
Economic Developments (Recommendations G, H, and I) - - - - -	17
In Production and Utilization of Food (Recommendations J, K, and L) - - - -	20
The Food and Nutrition Situation	
The Food Situation - - - - -	25
The Nutrition Situation - - - - -	30

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Progress in Scientific Basis for a National Nutrition Program
(Recommendations A, B, and C from 1941 Conference)*

Sybil L. Smith, Office of Experiment Stations

(Miss Smith discussed the continued progress in nutrition research in relation to the National Nutrition Program, and distributed and commented on the attached list of references to reports of research. In addition, she referred to the program of the National Cooperative Project on the Conservation of the Nutritive Value of Foods.)

* Recommendation A. The use of the allowances of calories, protein, and certain important minerals and vitamins, recommended by the Committee on Food and Nutrition of the National Research Council, both as the general goal for good nutrition in the United States and as a yardstick by which to measure progress toward that goal. It should be clearly recognized that these recommended allowances represent the best knowledge now available, and that they will undoubtedly be modified as more knowledge accumulates.

* Recommendation B. Translation of these allowances, and other similar technical material, into terms of everyday foods and appetizing meals suitable for families and individuals at different economic levels, in such a way that the newer knowledge of nutrition can be applied simply and practically in every home and in accordance with the food preferences of the family.

* Recommendation C. Vigorous and continuous research to add to our present knowledge of the nutritional needs of individuals, the nutritional status of groups in the population, the nutritive content of everyday foods, and the effects of various methods of production, processing, storing, and cooking on their nutritive value.

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Progress in Education of Professional Personnel
(Recommendation D from 1941 Conference)*

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American Red Cross

There has been an increase in the offering of Red Cross Nutrition Courses for elementary teachers, dental hygienists, nurses in the community and in consultations and conferences with Red Cross social case workers and nurses.

Since July 1941 chapters carrying nutrition education activities have increased from 121 to 2,327; the number of authorized instructors in nutrition education (volunteer and paid) has increased from 271 to 19,447; the number of chapters engaging one or more full-time paid nutritionists has increased from 15 to 58.

Children's Bureau

The introduction of additional units on nutrition into the training programs for professional workers in the health and welfare fields has been hampered by the reduction in the training period as a wartime measure. Nevertheless some progress has been made.

A Department of Nutrition has been established at the Harvard Medical School and School of Public Health. In the graduate program for a degree in Public Health, nutrition is one of the two required courses. The preparation of the Handbook of Nutrition by the American Medical Association has been an important contribution to medical education. The use of this handbook by practicing physicians has undoubtedly been greatly facilitated by its extensive free distribution through a manufacturer of pharmaceutical products.

The National Organization for Public Health Nursing in 1942 issued a curriculum guide for that professional field. The nutrition section of the guide was prepared by a committee of public health nursing educators and nutritionists.

The New York School of Social Work has introduced a unit in home economics, including nutrition. Other graduate training programs in social work have taken similar steps.

* Recommendation D. More widespread education of doctors, dentists, teachers, social-service workers, public-health nurses, and other professional workers in the newer knowledge of nutrition. At present this knowledge, especially in its practical applications, is familiar to far too small a group even in the professional fields.

More in-service education in nutrition for public health workers has been made possible by the increase in the number of nutrition consultants employed by State departments of public health. At the time of the National Nutrition Conference, 32 States were employing 64 nutritionists; the latest reports indicate that in late 1944, 44 States are employing 118 nutritionists.

The American Public Health Association has formulated a statement of minimum qualifications for nutritionists employed by public health agencies. This statement has been in greater demand than any other report of the Association's Committee on Professional Education.

Extension Service

Extension nutritionists have cooperated with school authorities by giving simple nutrition facts to teachers at institutes and workshops and discussing how this information might be adapted to motivate pupils at different grade levels. In some States extension workers have cooperated similarly in institutes for public health nurses.

Since September 1941 State extension nutritionists have increased from 78 to 81; white county and assistant county home demonstration agents have increased from 2149 to 2339, a total of 190; Negro county home demonstration agents increased from 234 to 250, a total of 16; Federal extension nutritionists increased from 1 to 2.

Under the War Food Administration special funds, 14 emergency War Food State supervisors, 647 white and 142 Negro county workers, and 21 urban War Food workers have been employed.

Farm Security Administration

Farm Security's most significant accomplishment in nutrition has been to teach low-income farm families the need for home production, conservation, and use of an adequate supply of food. Farm Security workers have learned and in turn are convincing low-income farm families that they will not have adequate diets unless they produce and use at least 75 percent of their food from the farm.

At the present time the Farm Security Administration has 1400 trained home economists working with low-income farm families. In 1944, 1300 of these worked directly in the counties and assisted more than 300,000 borrower families. A large portion of the time is spent in helping these families to produce and use a more adequate food supply, by teaching and guiding them in farm and home methods and practices which have resulted in more home-grown foods of the right kind and in sufficient amounts. A plan is made annually with each borrower family which includes kinds and amounts of foods the family needs, using the Basic 7 as a guide. A garden plan and a food preservation budget that is nutritionally satisfactory is developed with the family. Farm Security lends money to obtain cows, pigs, chickens, garden seed, and farm and home equipment and has helped the majority of these families to get satisfactory, or at least minimum equipment and storage facilities. In addition to the trained women working with the families to improve their food supply, farm supervisors who cover practically all agricultural counties in the country also give particular emphasis to production of food for home consumption and give families material assistance in other

phases of food work. In training meetings of supervisors, increased emphasis has been given to nutrition and methods of teaching nutrition to borrower families. Many home supervisors in the past two years have taught nutrition classes and a number of them have attended refresher courses.

Nutrition Programs Branch

Work with doctors, dentists, and public health officials has been directed toward stimulation of interest in the public health and medical aspects of nutrition. Emphasis has been placed on the relation of these aspects of nutrition to National, State, and local nutrition problems and programs.

Interest has been stimulated by the Nutrition Programs Branch Medical Officer in the following ways:

Attendance at, and participation in, National, State, and local meetings of public health, medical, and dental organizations.

Visits to State and local health departments to

Discuss nutrition problems in their relation to public health.

Assist State and local health departments in planning and developing nutrition appraisal programs.

(These visits are made only on request)

Distribution to health officers of carefully selected material dealing with the public health aspects of nutrition.

Nutrition clinic demonstrations, conducted at the request of State health officers and sponsored jointly by nutrition committees and health departments.

Nutrition clinic demonstrations and "slide clinics" conducted for medical students and medical school staff members on request of medical school authorities. At "slide clinics" colored lantern slides of various physical signs, associated with nutritional deficiency states are shown and discussed. Slides have been made of "patients" examined in various localities, with emphasis on early signs of deficiency conditions. Copies of the slides made in a State are made available to the state health department for use in its nutrition program.

Increasing interest on the part of public health officials and physicians is indicated by the rapidly increasing demand for service and requests for assistance in developing State and local nutrition appraisal programs.

In all States, refresher courses have been given for professional home economics workers. Practically every State has provided some kind of training or help in nutrition for elementary teachers. Kits of nutrition materials have been prepared and furnished to them in some places. A national workshop on elementary nutrition teaching was held at Terre Haute, Indiana.

Nutrition committees have helped school administrators and local communities appreciate the value of school lunches. Home economists have been added in some places to welfare staffs. In States where welfare departments are without nutritionists or home economists nutrition committees frequently are called upon to assist in preparing standards for food budgets.

A few nutrition committees have sponsored food and nutrition courses for grocers, boarding house proprietors, and restaurant workers.

Office of Education

In every State the home economics program in the public schools has given special emphasis to nutrition education, both in the high school classes and in the classes for adult homemakers.

In the majority of the States a goodly number of home economics teachers have worked closely with elementary teachers assisting them with plans and information for nutrition teaching. In some cases this has been done on a country-wide basis. One State reported that in two counties in the State every school, both elementary and high school, has worked intensively on the integration of nutrition education throughout the entire school. In one city a 2-weeks program of nutrition teaching in all first-grade rooms was carried on by home economics teachers and advanced home economics pupils. One State reported that 20 percent of the home economics teachers taught nutrition to elementary teachers. In that same State the home economics teachers prepared and made available to elementary teachers 392 nutrition kits.

Since 1941 there has been an increase of 28 assistant State or district supervisors of home economics. There has been an increase of 703 home economics teachers in the reimbursed programs employed for the summer term during which much attention is given to the production, conservation, and use of adequate food supply for the family.

Twenty-three State departments of education have employed at least one full-time supervisor of school-lunch programs. In 15 of the States there is one full-time supervisor. In 4 there are two full-time supervisors. In the other 4 States three, four, five, and six, respectively, are employed. One State has a full-time supervisor in each county.

Many school-lunch workshops have been held during the past two summer sessions. This past summer such workshops were held in Alabama, Arkansas, Florida, Kentucky, and Louisiana.

Nutrition workshops for teachers and other nutrition workers have been held. For example, in Puerto Rico the workshop was held for teachers, school administrators, Extension and Farm Security workers, and health education workers;

In Terre Haute the workshop was held for teacher trainers and school administrators. Eleven States were represented.

Several colleges and universities have given courses in nutrition for elementary teachers - Arizona, Nevada, Puerto Rico, Tennessee, Louisiana, Wisconsin, and Alabama.

Through Rural War Production Training Programs, 18,273 classes in production, conservation, and processing of food for family use were taught last year. Through that same program, 2,263 school community canneries were operated in which training in the conservation of food was given to farm families.

Practically every State held training conferences of from three to six days in length in food conservation. Those training conferences held last spring and early summer were for supervisor, teacher trainers, and teachers of home economics.

* * *

Progress in Popular Education (Recommendations E and F from 1941 Conference)

Compiled by Margaret Dreisbach, Nutrition Programs Branch, from material furnished by the agencies

Recommendation E*

In order to reach as many people as possible all kinds of educational and informational methods have been used. Although the program has been in progress over three years it is difficult to evaluate results objectively. It is possible, however, to record accomplishments.

One of the most encouraging developments has been the preparation of simplified but accurate material. Some of this material has been used to bring the essential facts about food and nutrition to individuals with little or no formal education. Noteworthy publications of this type have been the readers prepared under the Sloan Foundation project in rural Kentucky, the bulletins from the Rosenwald Fund project at West Georgia College, and the booklets "America and You" and "You and Your Baby" prepared by the South Carolina State Department of Health.

From the start of the war the Bureau of Human Nutrition and Home Economics has put facts from its current researches and backlog of scientific findings into wartime publications of a simple practical type designed to help homemakers adjust to rapidly changing food supplies and yet safeguard family nutrition.

* Recommendation E. Mobilization of every educational method to spread the newer knowledge of nutrition among laymen by means of the schools, motion pictures, the radio, the public press, home and community demonstrations, and all other suitable means.

For example, the voluntary Share-the-meat program was implemented by a folder entitled "99 Ways to Share the Meat," issued in an edition of 10 million copies and carried by community workers to homes throughout the Nation.

For many of the wartime nutrition and food conservation programs channeled to the public under the masthead "Food Fights for Freedom," the Bureau prepared folders and educational picture material giving how-to-do-it directions. "Get the Good from your Food," "Fight Food Waste in the Home," "Home Canning of Fruits and Vegetables," "Get Acquainted with Soya Flour and Grits," "Vitamins from Farm to You," and "Fats in Wartime Meals," are a few of the many titles.

Another encouraging development has been reaching individuals in the population who are in a position to put nutrition information to especially good use. Through the program of Emergency Maternity and Infant Care administered by State health departments using Federal funds, over a half million wives of servicemen have received medical care for themselves and their infants. Several States send these women instructions on diet for themselves and their babies at the time they approve their application for care. USO clubs and health agencies also conduct classes for these mothers, who receive instruction in foods and nutrition in relation to maternal and child health as a whole. For example, the nutritionist of one State Department of Health gave a week's unit on food and nutrition to the soldiers' wives attending an adult education project for those who have had little or no previous schooling.

There seems to be an increasing tendency to make dietary recommendations in terms of food within reach - both economically and geographically - of the individuals concerned.

To reach and influence larger numbers of people, extension workers have endeavored to adjust their methods of teaching. In-service training has been given extension agents in making radio talks, writing for the press, preparing exhibits, and training leaders. Result demonstrations have been featured particularly in providing adequate storage for home-produced and home-preserved food.

Red Cross Nutrition classes have been held for groups not being reached otherwise such as residents in trailer camps, housing projects, Government labor camps and mining and mill areas. In addition, nutrition classes have been held for the typical community groups of homemakers, restaurant and cafeteria workers, expectant mothers, Junior Red Cross and other young people in school. A number of Spanish-speaking groups, dairymen, grocers, industrial workers, and members of men's civic clubs have been some of the interesting groups reached through Red Cross classes. More high school boys were enrolled in nutrition classes than in previous years. Instructors for Red Cross nutrition classes have been home demonstration agents, home economics teachers, Farm Security Administration home supervisors, and other professional or lay persons who are technically trained. Between July 1, 1941, and July 1, 1944, 473,623 men and women were reached through Red Cross nutrition classes and 137,768 prepared for community services relating to group feeding by means of canteen and dietitian's aide classes.

A Red Cross radio series "Food for All" designed to interest homemakers in seeking help with their food problems through Red Cross nutrition classes has been presented by 300 stations throughout the country as of November 1, 1944. The potential listening audience is estimated at about 39,000,000 for each recording of which there are 9 in the series.

There is information on food and its use in each of the recordings which should be helpful to the homemaker. The information is intended to stimulate interest in seeking further help and guidance on food problems. The Red Cross Chapter Nutrition Chairman is given a few minutes at the end of each recording to present the local food situation. The radio series was financed by the American Institute of Baking.

Every possible means has been used to bring the various phases of nutrition and food information before the public. Exhibits, posters, car cards, press releases, magazine articles, radio programs, lectures, demonstrations, nutrition courses, movies and film strips, food information centers, approved nutrition reading lists in libraries, bookmarks, games, and authentic but popular literature have been used to make people food-value conscious.

The Nutrition Programs Branch provides a special press and radio service to local nutrition committees with weekly news articles and radio scripts about foods and nutrition which they can adapt to fit the local situation or use as background of facts in preparing other types of material. News articles on foods and nutrition have been furnished to foreign language newspapers and the Negro press.

Nutrition clinic demonstrations have been held in 17 States. Children and adults showing various degrees of nutritional deficiencies have participated in these demonstrations which have aroused interest in local nutrition problems. A number of health departments particularly those which have participated in nutritional status surveys preliminary to nutrition clinic demonstrations together with other agencies have recognized the need for continued fact finding as a basis for program planning.

Luncheon meetings and demonstration meals as a basis for discussion of nutrition and food habits have been successful for civic clubs, federated clubs, churches and other community groups. "What's Cooking In My Neighbor's Pot," a series of luncheons with menus typical of various countries, offered an opportunity to understand foreign food patterns. The Red Cross reports that such luncheons in one community were attended by 222 men representing 39 civic organizations.

A motion picture on canning was revised and reproduced by the USDA and made available in State film depositories. It has been used by various kinds of groups including schools and colleges. During July, nutrition committees sponsored showings.

Film strips have been used to supplement and illustrate lectures, talks, and classes. Among them are "Mess Management" made available to the Nutrition Programs Branch by the Army, "Hidden Hunger Exposed" by the Office of Distribution and "Today's Storage is Tomorrow's Dinner" by the Farm Security Administration. Various garden films have been made by the Extension Service.

To encourage food demonstrations as a means of helping people adjust to rationing and the use of alternate foods, a handbook called "Food Demonstrations in Warime" was prepared by a group of specialists experienced in giving food demonstrations to rural and urban groups from all income levels.

The campaign technique has been used from time to time to stimulate interest in nutrition. Many State or local committees have observed special nutrition weeks or nutrition months since their beginning. This was done in order to focus the

attention of the communities upon the need for good nutrition. One of these, while more elaborate than many, is illustrated by the Nutrition Week held in South Bend, Indiana in April 1942 when practically all organizations and interests were brought together. Those held in Rochester, New York, in Gilmer, Texas, in Oklahoma City, Oklahoma, and in Iowa City, Iowa are just a few of the many observances of nutrition week which have been planned and held by local nutrition committees.

Nutrition Month was observed by all of the States in September. Most of the States emphasized the planning and beginning of a year's program thus intensifying their regular activities. Many of the States also featured some special activity during September among which were radio programs, news stories, district meetings and conferences and special programs for club and organization groups.

Nutrition Committees have usually been part of such other campaigns as Victory Gardens and Food Preservation. In many States they also cooperated in the food conservation campaign as a part of the Food Fights for Freedom program.

The National Nutrition Conference recognized the relationship of food distributors and processors to an over-all nutrition program. Following the conference, representatives of the food and allied industries set up a Food Industry Committee with subcommittees representing food retailers, wholesalers, manufacturers, and packagers. The first promotion program had as its main objective popularizing the subject of nutrition. In early 1942, 3,500,000 posters, 3,500,000 flyers, and 500,000 kitchen charts were printed and distributed. These featured a food chart, symbol and slogan. The Food Industry Advisory Committee was helpful in getting the important food industries behind a cooperative effort to back the program. Manufacturers of household equipment, public utilities, life insurance companies, hotel and restaurant associations, and others joined the food industries in using nutrition materials in the magazine, newspaper, radio and motion picture advertising. It has been estimated that the first symbol, slogan, and food rules were reproduced over 400,000,000 times in public media.

Industry produced three motion pictures as a contribution to the program, "Hidden Hunger," "The Modest Miracle," and "This, Too, is Sabotage." There was no brand advertising in any of the pictures.

Three national radio programs have been broadcast in the interest of the nutrition program since 1941; "Listen America," "Fashions in Rations," and "Your Homefront Reporter," later called "Broadway Matinee."

Magazines have carried full-page advertisements in color.

The game Vita-Min-Go was invented and manufactured by a private industry. Its distribution has exceeded 534,200.

In late 1942 when food shortages began to develop, the original food chart was revised to remove reference to the quantities of food items that should be eaten every day. A national advertising agency was assigned to work with the Office of War Information and the Nutrition Programs Branch to design the present colored food target in circular form presenting the Basic 7 food groups. This has had greater industry response than the first food chart.

The new edition of the Encyclopedia Britannica, in preparation, will reproduce the Basic 7 Food Chart in an article on cookery.

A portion of the 2 million large posters carrying the chart which have been distributed has been used by industry. A life insurance company reproduced the chart in a pocket folder and distributed 3.5 million copies to its policy holders.

The tie-in of nutrition with private industry has helped acquaint vast numbers of people with the fact that there is a definite connection between health and the kinds of food they eat.

Recommendation F*

The purpose of the coordinated nation-wide nutrition program has been:

To make available to everybody the basic knowledge of good nutrition in simple terms.

To interest people in putting such knowledge into practice and show them how to do it.

To encourage those who have the facilities to produce a variety of nutritious foods.

To support through group action any practical measures which will make available to everybody the amounts and kinds of food considered necessary for good health and general well-being.

Under conditions of wartime food supply, emphasis has also been placed on ways and means of securing the highest nutritional return from available foods.

The President's National Nutrition Conference in May 1941 provided a stimulus for the nutrition program. Following the conference, a Nutrition Division, later called the Nutrition Programs Branch, was set up by Executive Order (1) to provide a service structure through which nutrition activities could be encouraged and related to all national needs, (2) to serve as a center for the coordination of nutrition services in Federal Government and other agencies, public and private, and (3) to make available upon request the services of specialists to assist in State and local programs.

State nutrition committees have served as the instrument for coordinating agencies, organizations and groups in State nutrition programs. All States, Hawaii, and Puerto Rico have active nutrition committees. Chicago, New York City, and the District of Columbia also have committees with State status. Forty-five State committees have executive secretaries to assist them in carrying out their plans. Wherever advisable, State committees have mobilized local groups through the formation of local nutrition committees. Nutrition committees are volunteer groups and usually include both technically trained and lay people.

*Recommendation F. Mobilization of all neighborhood, community, State and National organizations and services that can contribute in any way to raising the nutritional level of the people of the United States. Many existing organizations are available for this purpose. How they can be mobilized to cooperate most effectively will depend on local situations. State Nutrition Committees can give especially useful assistance in organizing this effort.

Working conferences have been the means of interpreting food programs and providing opportunities for joint planning to meet nutritional needs. Conferences have been held regionally for State nutrition chairmen and others. Institutes, workshops, and one-day meetings have been conducted by State committees to strengthen and assist local committees.

News letters and handbooks have also been a way of tying local and State committees into the national nutrition program. The Washington News Letter is distributed to State committee members and chairmen of local committees. Many State committees issue State news letters to their local committees.

State and local nutrition committees often use results from nutrition surveys or studies as a basis for planning programs of work. Many of these studies deal with the dietary habits of children. For example, Virginia compiled data on 6,000 school children for a period of one week at three different seasons of the year, and these records are available to local committees planning programs to meet specific needs. In other States, including Colorado, Illinois, Louisiana, Missouri, North Dakota, Pennsylvania, Rhode Island, Texas, Vermont, and Wyoming, dietary studies have also been made, often with selected groups and sometimes on a county, city or district basis.

In Iowa, a study was made as to the amount of food preserved and why canned food spoiled. In counties in Minnesota, New Hampshire, and New Mexico, and in Richmond, Virginia, surveys were made of the kinds of flour and bread that were available in the communities. In Wyoming and New Hampshire, surveys on the school lunch pointed up the need for help in this phase of a nutrition program.

In the State of Washington an analysis was made of the State resources. In Wyoming, the nutrition programs being carried on were analyzed to ascertain the number of people reached and the nutrition needs as identified by local workers. This information was used in planning for a program of work. In New Hampshire, interviews with a large number of families pointed out specific projects on which to work, such as the packed lunch, planning meals, and the school lunch.

Three studies were developed by the Program Surveys Division, Bureau of Agricultural Economics.

Nutrition and the War was a survey of housewives' opinions about food, the extent to which housewives are aware of the food situation, their knowledge of nutrition and practices, and the effectiveness of programs aimed at improving the nutrition of industrial workers.

Housewives Discuss Nutrition Programs was a study made in Bridgeport, Connecticut, and Richmond, Virginia, of programs of nutrition education and of the media through which they operate.

How City Housewives Respond to War Food Programs was a survey of attitudes in relation to saving fats, preventing food waste, home canning, victory gardening, and buying plentiful foods instead of scarce ones.

Nutrition committees have for reference the major reports of the Committee on Food Habits of the National Research Council, including a bibliography of the committees' publications called "Problem of Changing Food Habits". They also have the Food Habits Committee's "Manual for the Study of Food Habits". The manual sets up a pattern of research which includes data needed to solve the problems in relation to food habits. Committees also have for use "Inadequate Diets and Nutritional Deficiencies in the United States", "The Facts About Enrichment of Flour and Bread", and "Enrichment of Flour and Bread, a History of the Movement", published by the Food and Nutrition Board of the National Research Council.

Many national organizations and groups have cooperated in the nutrition program. Girl Scouts distributed 35,000 sets of folders and issued a manual on nutrition for scout councils. Camp Fire Girls promoted nutrition with exhibits and mother-daughter banquets featuring the Basic 7. Boy Scouts leaders have been interested members of nutrition committees. YWCA has provided business girls with help and guidance along food and nutritional lines. National Federation of Business and Professional Women has included nutrition in local programs and featured nutrition articles in its official paper.

Religious organizations such as the National Council of Jewish Women, National Jewish Welfare Board, Federal Churches of Christ in America, Council for Social Action of the Congregational and Christian Churches, and National Catholic Welfare Council have demonstrated their interest. Through articles in their official magazines, kits of material, and information bulletins or fact sheets, they have tried to influence their local groups in nutrition. Ministers have fitted the nutrition theme into sermons. In Utah, the Ministerial Association sent to all ministers and other church groups two sermons prepared by two members of the Association. The sermons were entitled "Observance of Nutrition and Nation Health Sunday" and "Food and Human Welfare." Men's Service Clubs including Rotary, Kiwanis and Lions have held noon luncheon programs keyed to the nutrition theme. These organizations have also sent out from national headquarters suggestions for programs and special observances.

To reach organized labor, cooperation was sought with labor leaders, and special service of labor education was set up in the Nutrition Programs Branch to stimulate interest in good nutrition among working men and their families. A national committee called "Labor's Committee on Food and Nutrition" has been organized, composed of members representing the American Federation of Labor, the Congress of Industrial Organizations, the Railway Brotherhoods, United Mine Workers of America, and the ladies auxiliaries. This committee has called attention to nutrition at national labor conventions through talks and exhibits. Funds have been provided by the committee to publish pamphlets on different aspects of the food problem and to conduct a nation-wide recipe contest. The labor press is devoting regular columns to food subjects and the nutrition program. Lectures, films, charts and discussions on food have been encouraged in union meetings throughout the country.

Nutrition work with Negro groups has increased since the National Nutrition Conference. One Southern State has a Negro State Nutrition Committee. As an experiment, Virginia was furnished a Negro executive secretary for one year by the General Education Fund. The majority of Southern States have Negro sub-committees or a Negro member on the regular State nutrition committee.

The Negro colleges have assumed leadership in nutrition education. Hampton Institute in Virginia, Tuskegee Institute in Alabama, Howard University in Washington, D. C., and Bennett College in North Carolina have for several years held summer workshops in nutrition for leaders. A Negro Child Health Conference sponsored by the School Health Coordinating Service of the State Department of Health, Durham, North Carolina, has provided an opportunity for Negro teachers to gain factual knowledge of nutrition and observe the effects of improved nutrition on the malnourished child. This pattern of a Nutrition Demonstration school is also being followed in other States. Some Negro schools are doing interesting animal feeding experiments using food that is characteristic of the individual regions.

Negro Farm and Home demonstration agents of the Extension Service and Farm Security Administration Supervisors and making a large contribution to Negro

nutrition work in the rural South. They counsel families on questions concerned with food production, food preservation, purchasing, marketing, and the home food supply, thus helping the Negro tenant farmer become more aware of the factors contributing to good nutrition and physical well-being. Negro newspapers, periodicals and magazines have carried nutrition information.

There have been reports of various interesting activities in connection with canning centers, and, in several of the Southern States, Negro groups have worked on school gardens and canned the produce for the school lunch for the following winter. Negro schools in the South are emphasizing more and more better lunches; both those prepared at school and those packed at home.

The nutrition program has included various racial, occupational, and cultural groups and all income levels. Progress that has been made justifies a feeling of pride. The Nation's resources in workers, in facilities and in nutritional technical knowledge have been mobilized to improve the level of nutrition throughout the Nation.

Economic Developments (Recommendations G, H, and I)

Frederick V. Waugh, War Food Administration

The National Nutrition Conference in 1941 recommended a vigorous and rather comprehensive economic program to reduce poverty, to improve food distribution, to give special assistance to low-income groups, and to provide direct measures to improve the diets of school children, low-income families, and other "vulnerable groups."

The economic situation in this country has changed greatly since 1941. National income and employment have risen sharply, prices have been controlled, some foods have been rationed, special programs have been developed to maintain an adequate food supply and allocate it to the most necessary uses, etc. Obviously, these important changes have not been due entirely to the National Nutrition Conference in 1941. Better management of our food supplies has been an inevitable result of the war. However, the accomplishments have been very great and we can well hope that when the war is over the Government will continue to take a good deal of responsibility not only for food production, but for processing, manufacture, transportation, storage, and distribution.

Recommendation G

Recommendation G of the National Nutrition Conference in 1941 read: "Vigorous and continued attack on the fundamental problems of unemployment, insecure employment, and incomes inadequate to maintain an American standard of living." The war has provided jobs for practically all employable people. According to the National Industrial Conference Board there were 47 million people employed in 1940, and 62 million people employed in 1943. No accurate figures of unemployment are available. The NICB calculates unemployment by estimating the total labor force and subtracting the number of persons employed. This kind of calculation shows that there were 7.6 million persons unemployed in 1940, but it shows that there were 6.4 million unemployed in 1943. This is a very peculiar situation, but in a sense we do have negative unemployment at the present time; that is: there are many people now unemployed who are not ordinarily counted as members of the labor force.

National income in 1940 was estimated at 78 billion dollars. By 1943 it had increased to 148 billion dollars, and this year it will be just about twice as big as the income of 1940. Not all this increase represents a net benefit to consumers. It has been partly offset by increases in prices. However, the cost of living has increased only about 26 percent since 1940, while incomes have doubled. War-time price controls have been reasonably successful and have been very important from the consumer standpoint.

Soon after this country entered the war there were many predictions of a "food crisis" or a "food shortage". A few people still think we are headed for a food shortage. However, everyone knows that so far the food supply as a whole has been quite plentiful. Agricultural production has been increased by 30 percent. This has enabled us not only to provide food for our military forces and for lend-lease, but to provide domestic consumers with more food per capita than they had before the war. Of course, domestic consumers have not had the butter and beefsteak they would have liked, but they have had plenty of food - at least as compared with prewar standards. Prices of food (as well as of other things) have, of course, gone up some, but purchasing power has risen more. Also, the consumer is unable to buy many nonfood items such as automobiles and washing machines. So, in general the consuming public has a greatly increased purchasing power for foods.

Of course, some low-income families still do not have enough purchasing power to get adequate diets, but obviously the number of such families is very substantially less than it was in 1940.

Recommendation H

Recommendation H reads: "Full use of any practical devices, such as the food stamp plan, school lunches, and low-cost milk distribution, which will bring nourishing, adequate meals to those who could not otherwise afford them, and at the same time help to distribute food surpluses at a fair return to the farmer." We have not been bothered too much with food surpluses during the war. Also, there has been less need for direct measures to provide food to low-income families. For these reasons the food stamp plan and the low-cost milk programs were suspended in 1942. Direct distribution of food to relief families has also decreased greatly. On the other hand, the school lunch program continues to be very active and a new program has been developed to encourage in-plant feeding in large industries.

In 1942 the school lunch program was reaching 6.2 million children in 93,000 schools, but many of these children were receiving only one item, such as an apple a day. In the fiscal year 1941-1942, 455 million pounds of commodities were distributed to school-lunch programs. By 1943 the war-time shortages of manpower, transportation, and storage facilities made it necessary to discontinue most of the direct distribution of food to schools and to put the school-lunch program on a reimbursable basis; that is, the agency operating the school lunch buys foods locally and the Government pays part of the cost. It is expected that this year's program will reach more than five million children in 40,000 schools. Although this represents fewer children in fewer schools than were reached in 1942, we believe there have been substantial improvements in the lunches provided.

Three types of lunches have been established, based on the recommended dietary allowances of the National Research Council. Type A is a nutritionally complete lunch; type B is not quite as good in nutritive content. Sixty-seven percent of all lunches currently served are of these types. Of the 475 million lunches served during the 1944 fiscal year, 77 percent included milk. More than 365 million half-pints of milk were distributed in school lunches.

Substantial improvements have been made in industrial feeding. In 1941 fewer than two million workers in manufacturing establishments could obtain food on the job. Today seven million workers in 10,000 factories have access to some type of in-plant food service, and further expansion of facilities will be made during the coming year. There appear to be big possibilities in this type of program, not only during war time, but as a permanent measure.

After the war there doubtless will be also a real need for developing some kind of food program to reach low-income families. Such a program will be an essential part of a national nutrition program and it also should be an important part of an agricultural program.

Recommendation I

Recommendation I stated: "Efforts to improve food distribution, including processing, marketing, packaging, and labeling, to bring about greater real economies for the consumer."

The Government has assumed a great deal of responsibility for food marketing and distribution during the war. This has included not only food price control and food rationing, but has also included the allocation of food supplies and the enforcement of a number of food orders. Food allocations have served a very useful purpose. They have enabled the War Food Administration to set agricultural goals and to determine what proportion of the supply shall go to civilian consumers in this country. These allocations have been made effective by food orders and similar means.

Food orders have also been used to bring about some economies in marketing and distribution. For example, the bread order has eliminated the uneconomic practice of commission selling and the return of unsold bread. The milk order, and especially the establishment of every-other-day delivery in most markets, has brought about economies in milk distribution. However, it is clear that the primary aim of most food orders has been that of enforcing food allocations rather than that of bringing about economies.

Perhaps we should mention here also that the war has stimulated the development of many new products and new methods in processing and distribution. It has given greater impetus to the dehydration of many products, especially eggs and milk. There have also been important new developments in freezing. It is quite possible that developments of this kind may have a great deal of permanent value after the war and may greatly change our methods of marketing and distribution.

The developments in grading, inspection, and labeling have not been entirely uniform. Extensive Government purchases for military and lend-lease purposes and also for price-support purposes have meant a great increase in the inspection of agricultural products. Also, the price ceilings have brought about a greater use and greater recognition of grades and standards. On the other hand, Congress decided, in the early days of price control, that there should be no compulsory grade labeling. There have been many complaints of up-grading. It is common for many food products to sell at ceiling prices without much regard for quality. This has not given farmers any too much incentive to do a good job of quality improvement on the farm, nor a good job of grading. Also, the consuming public has not been too fussy about the quality of foods and is glad to get whatever kind

of food is readily available. This is definitely a war-time phenomenon. After the war the consumer, the farmer, and the food trades will pay a great deal more attention to quality.

In the long run, also, we can well build on the experience of the War Food Administration in working with the food trades. I believe that after the war the Department of Agriculture should have much more responsibility than it had before the war in the fields of food processing, storage, transportation, and distribution. We will need to find a satisfactory way of working with food trades on matters of this kind. Perhaps it can be done through marketing agreements or some similar device. I believe that substantial improvements in food distribution are needed and are possible. If we could find an appropriate way of working with and through the food trades we can do a great deal to bring about more orderly and more efficient food marketing.

Progress in Production and Utilization of Food
(Recommendations J, K, and L from 1941 Conference)

Esther F. Phipard and Ruth Van Deman, Bureau of Human Nutrition and Home Economics

Recommendation J

This recommendation reads "encouragement in all practical ways of greater production of the foods needed in more abundance in the average American diet." Prior to the National Nutrition Conference in 1941, little had been done to stimulate production on a commercial scale of the foods needed in more abundance in the diet. Production was geared chiefly to meet anticipated demand, and under the Agricultural Adjustment Administration program to maintain farm prices at levels that bore specified relations to parity.

The coming of war, however, necessitated a managed food supply program to supply the needs of our armed forces and those of our allies as well as to meet the greatly increased civilian demand. Hence there has been more control over the kinds and quantities of foods produced than ever before.

The demand for so much more food at a time when labor and agricultural materials were short put a great strain on our productive capacity. It became all the more necessary to produce those foods that yield high nutritive returns. Agricultural production goals therefore have reflected some of the shifts that have been deemed desirable. You may remember, 2 or 3 years ago, hearing about the decreases in acreage indicated for some of the vegetables-- celery, lettuce, artichokes, watermelons, for example--because they were less important nutritionally and more expensive to produce in terms of labor and materials than were other kinds of crops for which there were suggested increases.

During the last year or two there have been some adjustments in production of meat animals because of feed shortages. A great deal of study has been given to the relative efficiency of grain products used as direct food for humans and as food for livestock to be converted into meat, fat, milk, and eggs. Actually production of all these foods has been increased but if the war continues for a long time or if demands for food from our country increase greatly, there might need to be even greater shifts among different types of food produced.

It is difficult to predict to what extent nutritional considerations will enter into production planning after the war. Probably our most effective way of influencing the production of nutritionally valuable foods is through an educated consumer demand.

Recommendation K.

This recommendation reads "Encouragement in all practical ways of more production for home use by rural families, especially those at low-income levels."

This group is well aware of the importance of home-produced food to levels of living rural families. You all know, too, of the fine work the Extension Service has done in encouraging and assisting families to plan and carry out home production programs to meet individual family needs. Annual reports of these activities have indicated something of the greatly increased scope of this work.

The Farm Security Administration working with low-income families has also done much to promote the application of this recommendation. In 1943, 326,000 low-income farm families were assisted. It is the experience of this agency that these families will not have adequate diets unless they produce at least 75 percent of the food they need. From the 1941 Family Progress Report, borrower families have, since coming on the FSA program;

1. Doubled the production of foods and other goods for family use.
2. More than doubled the fruits and vegetables preserved for family use.
3. Doubled the production of meat for home use.
4. Increased milk production for home use by two-thirds.

Since Victory gardens came into the picture, we can no longer think of home-production as a strictly rural enterprise. Neither can we think of home production without mentioning home-preservation. These two phases, with a very definite slant toward better nutrition, have increased markedly since 1941. War made them a necessity.

Figures for 1944 have just been released, showing that there were 18.5 million Victory gardens this past summer. This may be a million or two fewer than in 1943, when the total yield was estimated at 8 million tons. Ernest Moore, manager of the Victory Garden Program for the Department, says that the decrease in number of Victory gardens this summer was probably more than offset by better management and higher yields. The 1944 Victory gardens are said to have produced 40 percent of the fresh vegetables consumed last summer.

Apparently the Victory gardeners are putting nutrition gospel into practice too in choosing their vegetables. Nutritionists can rise and take a bow for the impetus they've given to the planting of vitamin-rich vegetables. For example, this year's report shows that 97 percent of all farm gardens had tomatoes. And so did 94 percent of all town and city gardens. Victory gardeners also went in for the virtuous vitamin-A-rich carrot. Carrots were grown in 66 percent of the farm gardens and 62 percent out of those in towns and cities. And the green leaves were well represented also. Of the farm gardens 47 percent grew turnip greens and 63 percent had lettuce. The town and city gardeners were fonder yet of lettuce, with 71 percent of them reporting lettuce in their gardens.

In speaking before the Victory garden conference held here in Washington recently, War Food Administrator Marvin Jones made a strong plea for as large a Victory garden program in 1945 as we've had this year. Granted that we are nearer victory than we were a year ago, it would be most unwise to let down now on a program like Victory gardens that does so much to keep the civilian population well fed.

The Department has also made a survey of 1944 home canning. The figures haven't been released officially yet, but we have permission to pass them along to you.

Home canning went on in 25 million homes this summer, with a resulting production of 3 billion 4 hundred million quarts of fruits and vegetables, jams, jellies, pickles and relishes.

Since our citrus crop in Florida was greatly reduced by the hurricane that whipped across the Gulf of Mexico in September, it's good to know that home canning put some 720 million quarts of tomatoes and tomato juice on pantry shelves. And again thanks partly to nutritionists for their emphasis on vitamin C, as well as to the engaging color and flavor of the tomato itself, it was the most widely canned vegetable. Another point in their favor also is the fact that tomatoes are processed in the water bath, without the need for one of those still-too-scarce pressure canners.

Unfortunately we do not have similar figures on home gardens and home canning for the years before 1941 by which to measure just how far we've come since the National Nutrition Conference recommended increased home production of the protective foods. But it is obvious that millions of families, getting fresh vegetables directly from their own gardens all summer, and canning some of the surplus for winter, have probably for the first time brought their meals up to the minimum standard of 4 servings of fruits and vegetables every day, and some of them to the ideal of 6 or 7 servings. Also, many have changed their attitude about vegetables entirely. They've discovered how good fresh vegetables right out of the garden can be. They're not going to be happy with just meat and potatoes from now on. They're going to eat a better balanced diet and like it.

Some of the canning done last year was carried on in community canning centers. According to reports between 5,000 and 6,000 centers operated last season, an increase of 35 percent over the number in 1943. Nearly half of the total number in 1944 were in the Southern Region. As you know the War Food Administration has encouraged the establishment of these centers. Plans are being made to expand centers already established and to add new ones in rural areas where production justifies their existence. There is every reason to believe that many of these centers will continue to operate after the war.

Each year more and more food is preserved by freezing. The frozen food locker industry started in the West and has been expanding toward the Eastern Seaboard and into the Southern States. Wartime shortages of materials have temporarily slowed down expansion of this important industry, yet its growth in the last 10 years has been remarkable. In 1935 there were 250 plants; in 1941 about 3,600; in 1945 close to 5,500. In January 1944 these plants were serving more than 1,500,000 families, about three-fourths of whom live in rural areas.

After the war we may expect rapid growth of freezing facilities, including commercial freezing lockers as well as home freezer units. There is also the possibility that community canning centers will add freezing and cold storage facilities to operate as part of the cannery. These developments will have significance for nutrition, not only because of what frozen foods can do for variety and palatability of meals but because of the relatively high retention of vitamins in these products.

Recommendation L

This recommendation reads "Improving the nutritive value of certain low-cost staple food products, such as flour and bread, by enrichment with nutritive elements that have been removed from them in modern milling and refining processes."

Although this recommendation was phrased at the National Nutrition Conference, the idea of improving the nutritive value of staple food products was not new. The addition of iodine to salt, for example, was first tried out in Michigan 20 or 25 years ago. The addition of vitamin A to margarine has its beginning something like 10 years ago and has gradually spread so that now over 90 percent of the margarine on the market is fortified with vitamin A.

The practice of adding vitamin D to milk had been approved several years prior to the National Nutrition Conference by the Council on Foods and Nutrition of the American Medical Association. This group provided early leadership and guidance in the development of thought regarding fortification of foods. In August 1939 there was published a resolution prepared jointly by the Council on Foods and Nutrition and the Council on Pharmacy and Chemistry, which recognized certain fortifications as being in the interest of public health. These included the addition of vitamin D to milk; of vitamin A to substitutes for butter; of iodine to table salt; and of calcium and iron in specified amounts to cereal products.

About this time there was a good deal of discussion about the fortification of such cereal products as bread and flour, with thiamine as the first ingredient considered and riboflavin and iron later. In September 1940 the Food and Drug Administration held hearings on flour and the need for its nutritional improvement which paved the way for future action and the setting up of standards of identity.

Many problems had to be dealt with. There was the question of the legal status of such a program; the choice of a proper basis for addition of nutrients; the question of labeling, and even of a name for the process. This last point was particularly troublesome because it embodied the whole philosophy of the nutritional improvement of food on which there was not unanimity of opinion among nutrition-minded persons.

By the time of the National Nutrition Conference, however, the name "enriched" had been decided upon and standards had been fixed. The Food and Nutrition Board which had been established only a few months earlier gave support to the program and the Conference endorsed this action.

What has happened since the Conference is familiar to all of you:

1. The setting of first standards for flour with an informal agreement as to bread.
2. Food Distribution Order No. 1 requiring enrichment of white pan bread--effective in January 1943.
3. Further hearings held in April 1943 with higher levels becoming effective in October 1943.
4. Further War Food Administration orders extending bread enrichment to include white rolls, and Vienna, French and Italian breads.

Under wartime administration, enrichment of bread and rolls is mandatory, but that of flour is not. It would appear that sections of the country where families buy flour but little ready-baked bread are not receiving the hoped-for benefits from the enrichment program, except in a few states that have mandatory legislation. These States are South Carolina, Louisiana, Alabama, Texas, Mississippi, and Kentucky. Several others are considering such legislation.

The benefits of such a program to individuals are in direct proportion to the prominence of bread and flour in their diets. The effect on the over-all national diet will be discussed this afternoon.

So much for bread and flour, which were specifically mentioned in the Recommendation L.

One of the side issues accompanying developments in the flour and bread enrichment program has been the question of how to deal with proposals for enriching other foods. The Food and Nutrition Board issued a statement of guiding principles which is very similar to the policy of the Food and Drug Administration on this question. In effect these groups would restrict the addition of nutrients to those staple foods that are effective vehicles for correcting dietary deficiencies in the general population or in specific age, geographic, economic, or racial groups. They would not favor enrichment of sugar or sweets or of carbonated beverages. Macaroni and rice have been up for consideration but because they are consumed largely by special groups, they have not to date been considered suitable for a federally-sponsored enrichment program.

Enrichment of corn products has received considerable attention and is a matter of special significance for the South. Three States--South Carolina, Alabama, and Mississippi - have passed laws making mandatory the enrichment of degerminated corn products, which it is planned will become effective on February 1, 1945. However, there are many difficulties in the way before a completely satisfactory program can be established throughout the South.

A proposal to fortify milk has recently been submitted to the Food and Nutrition Board for consideration. A preliminary statement of the Committee on Milk indicates that this group does not favor the general fortification of milk with minerals or with vitamins other than vitamin D.

The Food Situation 1/

Faith Clark, Bureau of Human Nutrition and Home Economics

My remarks about the food situation are based upon estimates of the over-all national food supply; i.e., on the average per capita quantities of the principal foods or groups of foods moving into civilian consumption in this country. 2/ Naturally these figures do not tell about the food consumption of individuals - adults or children - in any particular region, State, or income group. But they do give us a fairly good picture of trends in food consumption during the past few years throughout the country as a whole. They also provide a background for appraising expected food supplies in 1945. Furthermore, they can be translated into nutritive value and can serve as an indication of the changes that have taken place in the quality of our average national diet.

So far as total food production during the war is concerned, most of you are probably aware of the tremendous increases in production that have taken place. In 1944, total food production, i.e., all food produced in this country, was over a third higher than in 1935-39. In 1945 it is expected that total food production will be slightly less than in 1944 but still 25 percent higher than in 1935-39 and that the per capita civilian supply will also be slightly less than in 1944 but still almost 7 percent above 1935-39. These forecasts are based on

1/ Since this talk was given on December 11, rationing was tightened in late December and early January and there has been some talk of food shortages. Actually there are no indications at this time (early January) of any major changes in the estimates of the quantities of foods available to civilians during 1945. Decreased supplies of meat, butter, canned fruits and vegetables, and potatoes had already been forecast before the tightening up of rationing took place. Despite these reductions, there will not be any over-all shortage of food for civilians. Even if civilian supplies of some foods are cut more than is now expected, the abundant supplies of many foods will make possible a level of food consumption at least as high as during the pre-war period.

2/ Per capita quantities of foods moving into civilian consumption are obtained as follows: To the total quantity of a food produced in this country during a given year are added the quantity imported and beginning-of-year stocks. From this sum, the quantities exported, retained in end-of-year stocks, used by the armed services, and used for feed, seed, and nonfood uses are deducted. The balance is then divided by the number of civilians (including an allowance for members of the armed forces eating out of civilian supplies) to give an average per capita figure. Retail weight estimates are arrived at by making some deductions for loss or waste of food between farm and kitchen. Such estimates of apparent per capita civilian food consumption have been supplied by the Bureau of Agricultural Economics to the Bureau of Human Nutrition and Home Economics for nutritional evaluation.

certain assumptions made early in November 1944: 1) that the war in Europe would be won during the first 6 months of 1945 and that the war with Japan would continue throughout the year; 2) that the armed services, lend-lease, and relief would need almost as much food as in 1944; and 3) that total national income would be somewhat less than in 1944 but the civilian demand for food would not be materially less than this year.

We have just rounded out the third year of United States participation in this war. In 1941 before we were in the war as belligerents and although lend-lease was in effect, we civilians had more food available for consumption on a per capita basis than we've had since the first records of production were kept. When I say more food here I mean both total pounds as well as an average of the pounds of various foods consumed multiplied by their pre-war prices. Such an average is an index of total food consumption and is the one used when we say that consumption in 1944 is 7 percent above 1935-39. Consumption times price really indicates money value of the food consumed. On this basis when the Nation as a whole can afford more of the more expensive items such as meat, milk, eggs, fruits, and vegetables, and the consumption of these items is not restricted by rationing, the index of consumption is high. In 1941 this index was 6 or 7 points above the index for the 1920's and about 10 points higher than during the depression. During the war years this index has dropped only one or two points below the 1941 peak indicating that so far as our total per capita civilian food supply is concerned, we have not lowered our level of living materially.

Let us now look briefly at the trends in the consumption of the major food groups during the past quarter century. We'll also try to look forward into 1945, remembering the three assumptions that were previously stated.

(Charts were used here, which showed the per capita civilian supply of 11 major groups of foods from 1920 through 1944. The following notes on each food group highlight the points brought out by the charts.)

Milk - Quite startling rise since 1920. Increase since 1920 is about 40 percent. There have been wartime shifts in the utilization of milk. More of the skim milk is being used for manufactured milk products instead of being fed to animals and more families can afford to buy whole milk than formerly.

1945 - about the same as 1944. Less evaporated milk but possibly more cheese.

Potatoes -

Downward trend noted in past 25 years

1945 - down a little because of relatively small 1944 crop of white potatoes

Dry beans, peas, nuts -

Upward trend - accounted for by increases in the consumption of dry beans, peas, and peanuts

1945 - expected to be about the same as 1944

Citrus fruit and tomatoes -

Marked upward trend due to the increase in citrus fruit, tomato juice, and tomatoes. The largest increase has been in the consumption of oranges; in 1943 and 1944 consumption of oranges was more than twice that in 1920.

1945 - originally thought to be higher than 1944. Now thought to be about the same, because of the hurricane damage.

Green and yellow vegetables -

Upward trend; from about 60 pounds per capita per year in the early 1920's to almost 90 pounds in the 1940's. These figures exclude produce from town and city victory gardens. Undoubtedly they would have boosted these figures higher for recent years.

Canned vegetables: Although commercial 1944 pack was large, civilian supplies may be reduced before the 1945 pack comes in. The civilian portion of the 1945 pack will depend upon the needs of the armed services, lend-lease, etc. Since it probably will not be above the 1944 supply, it will definitely be necessary to supplement the commercial pack with home-canned supplies.

Other vegetables and fruit -

No marked trend in the civilian supply of this group in the past 25 years. Civilians now get less than two-thirds of the canned fruit pack although the consumption of fruit juices is higher than in the pre-war period. Wartime decreases also in imported fruit, such as pineapples and bananas, although more of these are expected to be imported in 1945 than last year.

1945 - about the same as 1944

Meat, poultry, and fish -

No marked trend for this group in the past 25 years.

1945 - total civilian meat supplies are expected to be down at least 5 to 10 percent from 1944, with pork down about 20 percent. More of the better grades of beef are expected in 1945. Smaller supplies of chickens.

Flour, cereals -

Long - term downward trend.

1945 - same as 1944

Fats and oils -

Slight upward trend in last 25 years, but smaller wartime supplies than in the peak year, 1940. But there may be less waste of fats than before the war.

Only 1 pound more margarine consumed in 1944 than in 1935-39, but over 4-1/2 pounds less butter, per capita per year.

1945 - about same as 1944. Slightly less butter and lard than in 1944.

Sugars and sirups -

Not any definite trend in this group since 1920. There was, however, a big increase in the consumption of sugar immediately after the last war.

1945 - about the same as 1944.

Although the consumption of some food groups has gone up and some down, it is evident that the consumption of most of the protective foods has increased in this country since 1920. This indicates that we have raised the quality of our food supply. Food supplies as you know can also be measured in terms of calories, protein, minerals, and vitamins. When we do this, we find that nutrition levels in the war years are, for most nutrients, higher than prewar levels; in fact higher in some cases than for any period back as far as 1920.

As expected, food energy or calories have not exhibited any long-term upward trend. Protein has shown a moderate increase since 1935, but the quantities of some of the minerals and vitamins in our national average diet have risen rather spectacularly since 1920, but more especially since the middle thirties.

Calcium has shown a steady upward trend ever since 1934 and even a gradual improvement from back as far as 1920. We all know that the best source of calcium in food is milk. Approximately three-fourths of our total dietary calcium is contributed by milk. Consequently the upward trend in calcium available in the civilian food supply closely parallels the upward trend in milk consumption.

Milk is also a good source of riboflavin. Almost one-half of the total riboflavin in our diets comes from milk so the trend in riboflavin available in our food supply follows to some extent the milk consumption. That is, up until enrichment entered into the picture.

The effects of the enrichment of white bread and flour with iron, vitamin B, and niacin on the over-all nutrition level were first seen in 1942. In 1944 thiamine has been estimated to be a fourth higher than it would have been without enrichment; iron and niacin, approximately a fifth; and riboflavin, one-seventh. We have estimated that in 1935-39 before enrichment, grain products furnished 15 percent of the total thiamine in the food supply while in 1944 largely because of the enrichment program, grain products furnished about 30 per cent of the total thiamine. Proportionally more of the total quantities of iron, riboflavin, and niacin are also now furnished by grain products than before enrichment.

Vitamins A and C, as you know, are not affected by the enrichment program. They are furnished chiefly by vegetables and fruits and in the case of vitamin A, also milk, butter, eggs, and liver. Both of these vitamins have exhibited steady upward climbs although both have had their ups and downs. Vitamin C has risen somewhat more rapidly than vitamin A due to the almost phenomenal increase in the consumption of citrus fruit in this country. Increases in the consumption of green and yellow vegetables and of milk are chiefly responsible for the increased quantities of vitamin A available. Victory gardens have added particularly to the supplies of vitamins A and C in the over-all national food supply.

So much for the trends. What about 1945 in particular! It looks to be almost as high as 1944 for most nutrients. Calcium and riboflavin are expected to be about the same in 1945 as in 1944, largely because civilian supplies of milk will be about the same.

Calories, protein and the others may be down from 1 to 5 percent from 1944 so far as can be anticipated at this time. The decreased supply of pork will account in large part for the lower protein, vitamin B, and niacin supplies...

In general the nutrition level as indicated by these over-all figures shows considerable improvement since the last war. But we shouldn't let the improved situation lull us into complacency. I have been referring all along to national per capita averages. And there are several reasons why these averages--even though they appear to compare favorably with the Recommended Dietary Allowances of the National Research Council--should be considerably higher for most nutrients if we are to attain good nutrition in this country.

1) The estimated quantities of the various nutrients referred to here are based upon raw, uncooked foods. No deductions have been made for cooking losses and we know that there is considerable loss during cooking, especially of vitamins C and B. Likewise no deductions have been made for household waste, such as food left on plates, etc. These estimates are intended to pertain to the quantities of food brought into the kitchen and therefore cannot be compared directly with quantities of nutrients recommended for ingestion.

2) The second reason why we must allow larger average per capita quantities of several of the nutrients is because we don't eat nutrients as such but eat foods. While eating enough of certain foods to obtain his full requirement for one nutrient, an individual may obtain more than his requirement for another nutrient. For example, a child needs 3 to 4 cups of milk in order to meet his calcium needs, but because milk is also such a good source of riboflavin, the child really gets more than his recommended allowance of riboflavin. The reverse is true for adults; the amount of milk needed to provide riboflavin requirements will supply more than enough calcium. Therefore, the national average quantity of calcium and riboflavin in the food supply must be considerably higher than the average obtained by weighting the recommended quantities for individuals by the number of individuals in the population.

3) The third and perhaps the most important reason why we need to reach higher average nutrient quantities is the disparity in the distribution of food. An average usually means that half of the families obtain less and half more than the average. In the case of nutrients, somewhat over half of the families probably obtain less than the average for all nutrients. In the case of vitamin A particularly, considerably more than half obtain less than the average because of heavy concentrations of this vitamin in certain foods. And the large amounts above the average consumed by many do not help in the least those who consume less than the average. We are all aware of the wide differences in income and with it, differences in food consumption in this and other countries. Here also we have regional differences as well as differences between farm and nonfarm families.

All of these reasons add up to the fact that the average quantities of nutrients in the national food supply need to be treated cautiously and that the quantities of most of them need to be larger than they now are.

In looking towards the future, it seems to me, we want first to maintain the gains we have made, and second to show continued improvement.

After demands for food products of the armed services, lend-lease, and relief decrease, we shall be able to produce plenty of food for our own civilians--in fact we may have some so-called surpluses. Can we absorb them? Obviously not all of them. We hope that foreign markets will be found for some and that we will cooperate in world organizations which seek to promote better nutrition for all people. But can't we use some of these so-called surpluses right here? Perhaps we can't

use very many more calories than we used in 1941, a peak year in calories, but we certainly need more of almost all of the other nutrients. This will have to be obtained by a rearrangement in the foods we eat--more of the protective foods--milk, eggs, fruit and vegetables--and less of the cheaper and more highly refined foods.

To bring about such shifts in food consumption, it seems to me, we shall need first to continue our educational work of teaching people not only what constitutes a good diet but also to want to have a good diet; second, to provide schemes which will assure the distribution of the right kinds of food to low-income consumers and the vulnerable groups (such as school children), and third, to evaluate and continue, if desirable, schemes for improving the quality of food (such as the enrichment of flour and bread).

The Nutrition Situation

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An appraisal of the nutrition situation in the broad sense includes a description not only of the food we eat, but of the effect of this food on our health and well-being. Unfortunately there are no Nation-wide figures to describe the state of nutrition in this sense of the word. Hence, this afternoon I should like to review briefly how we go about to measure the nutrition of the country, what we can learn from some of these measures, and what is the outlook for the future in terms of nutrition.

One approach to an assessment of the nutrition of the country is, as I have suggested, by determining food consumption, converting to nutrients and comparing the nutritive value against a standard. Miss Clark has shown you how this has been done with the per capita food supply and some of the things we can learn from it. An over-all picture of the per capita food supply translated into nutrients is useful for showing trends over the years, for indicating probable weak spots in our national diet and for comparing food consumption in this country with that of other countries. A study of this kind has been made during the war in the Food Consumption Level Inquiry in which consumption in the United States is compared to that in Great Britain and Canada. There are several limitations to be observed in using data of this kind, first because of possible errors inherent in deriving food consumption statistics--for example, in converting from production figures to a retail basis--and in the translation into terms of nutrients. It should be remembered that any figures giving a nutritional evaluation of food are only as good as the basis figures on food composition. Another limitation in this kind of analysis is the fact that a national average tells nothing about the dietary levels of the families below the average.

Large-scale family dietary surveys also are useful for showing trends from one time period to another and for giving a national average. But they go one step further in describing the nutrition situation in that they show variations between groups--regional groups, income groups - and between different types of communities, such as farm and urban. They are useful thus for indicating probable dietary inadequacies and their incidence among different segments of the population. Such data serve as a basis for planning educational programs by indicating the kind of material to be developed and the groups to which it should be directed. They are fundamental in the development of food distribution programs such as Dr. Waugh described

this morning. They give a basis for defining eligibility of participants and the scope of the program.

There are, of course, certain limitations to the use of data from dietary surveys. Usually the information obtained from each family refers to food consumption for one week only, and hence does not tell how well or how poorly that family eats during the remaining weeks of the year. The food record or food list gives a measure of the food brought into the kitchen for family consumption, but does not tell us how the individuals in the family share in the food supply. Usually there is little information on household waste and methods of food preparation, factors which can greatly affect the quantities of nutrients ingested. Large-scale studies like these are expensive and time-consuming and usually cannot be conducted without having public funds available.

In addition to these large-scale studies, there are numerous smaller ones designed to give information about the diets of special groups. These are extremely useful and we hope to see many more of them in the future. Each one adds a certain kind of information and helps to piece out the entire picture of our dietary situation.

There are an increasing number of surveys being conducted in the United States to determine the nutritional status of individuals by means of laboratory and clinical tests and medical examinations. There are the "complete" types of surveys like those which have been conducted by Dr. Youmans and his associates in Tennessee and by Dr. Milam and his staff in North Carolina. In these studies an attempt has been made to get at the real nutritional state of a group of people through all possible approaches, making use of dietary histories, clinical examinations, and laboratory tests. Considerable work of this kind has been done also under the auspices of the Milbank Memorial Fund.

A large amount of information is accumulating also from less complete studies using one or more of the kinds of measurements used in the "complete" studies. For example, there are studies of the ascorbic acid levels in the blood of school children at different seasons of the year. There are other studies in which the biophotometer or other device has been used to detect night blindness or vitamin A deficiency. In a recent study of a group of aircraft workers the nutritional status was investigated by physical examination, determination of hemoglobin and plasma ascorbic acid levels, and biomicroscopic examination of the conjunctive and cornea of the eye (to determine vitamin A and riboflavin deficiency).

The usefulness of nutritional status studies is obvious. We need more of them and especially those done in conjunction with studies of food consumption in order to have a sound basis for judging the adequacy of our food consumption. At present there are limitations of cost, lack of trained personnel, and the amount of time involved in these elaborate studies. Moreover there are a number of problems which need to be ironed out before the results of nutritional status studies can be interpreted with confidence. One has to do with methods. It has been the experience of a number of investigators that the methods they started out to use in their surveys have proved unsatisfactory and have had to be abandoned while the studies were in progress. There is need for greater standardization of techniques, and for a better understanding of the meaning of the results. There is need also for the development of more rapid methods for assessing nutrition so that they may be applied to larger groups of our population.

Information on nutritional deficiencies comes also from the clinician. Among the most dramatic reports are those of Dr. Spies, Dr. Jolliffe, and the Public Health

Service. Reports of this kind differ from those described above under nutritional status studies in that they refer to individuals who come to the hospital or the clinic because of illness, and they do not represent any random sampling of a population group. They give us a picture of the signs and symptoms associated with the more extreme deficiencies and are very important in teaching other clinicians how to recognize nutritional deficiencies at various stages of development.

Other types of information about the state of our nutrition come from less direct sources. For example, morbidity and mortality statistics throw light on the health and vigor of our country. They are especially useful because they indicate long-time trends. It is important to remember in this connection that nutritional status as a whole is not a result of what we ate last week but shows the cumulative effect of our food intake over a period of years. Results of selective service examinations have been quoted repeatedly to indicate the effects of poor nutrition. Health examinations and physical measurements such as are made in schools constitute another source of information.

Still another method of approach to the problem is what might be called a "deduction" method. In this type of study the usual diet of a group of persons is supplemented by the addition of certain foods or nutrients and any effects upon health and well-being are noted. If there is improvement then it is assumed by deduction that the previous diet was not adequate in all respects. This means of approach throws some light on human requirements for specific nutrients.

Finally there are a number of other sources of information that provide qualitative indications about food consumption and nutritional levels. Studies of food habits, analysis of menus, and observations of qualified persons might be mentioned as an illustration.

We have learned from all these approaches. An analysis of our per capita food supply indicates that dietary levels in the last year or two have been higher in most respects than at any time in the past decade. Dietary surveys of the Bureau of Human Nutrition and Home Economics would bear this out. Results of the study made in the spring of 1942 show considerable improvement since 1936 when the last Nation-wide survey was made. Families had more money to spend for food in 1942 and with it they bought more of the protective foods--milk, eggs, vegetables and fruit--that make for better diets. Results of the 1936 study indicated that half or more of the families in this country had diets that failed to meet the National Research Council recommendations for calcium, ascorbic acid, thiamine, and riboflavin. Estimates for the spring 1942 study suggest that more than half still did not meet the recommended allowances for riboflavin although levels were considerably higher in the later period; but the proportion of diets short in calcium had been reduced to less than one-third, thiamine to one-fourth, and in ascorbic acid to less than a tenth. There was considerable reduction also in the proportion of diets that failed to provide the recommended quantities of other nutrients. In spite of marked improvement there was still a substantial proportion of diets that could not be considered good. Other smaller studies, while not set up to show a comparison from one time to another, nevertheless show a significant proportion of poor diets in the particular group studied.

From the more complete nutritional surveys such as those of Dr. Youmans and Dr. Milam there is evidence not only of poor diets but of certain nutritional deficiencies with respect to a number of nutrients. Both these investigators point out the importance of the criterion used in determining nutritional deficiencies, and the apparent lack of correlation between the findings from different

methods to detect the same deficiency. For example, in Dr. Youman's report of the vitamin A nutrition of a rural population in middle Tennessee he states; "There are three aspects of these results which are of particular interest and importance. They are: (1) the relatively large amount of vitamin A deficiency as indicated by the dietary intake records, the adaptometer test and the vitamin A level in the blood, (2) the relative scarcity of symptoms and physical signs of a deficiency, and (3) the lack of correlation between all these various measures of vitamin A nutrition." Several investigators have noted the lack of correlation between the calorie value of the diet and body weight. It is quite common to find an apparent calorie intake considerably below the levels recommended in the dietary allowances of the National Research Council. This probably means one of two things, either that we have not been able to measure calorie intake very accurately or that the recommended allowances may be too high.

According to the report of the National Research Council, "Inadequate Diets and Nutritional Deficiencies in the United States," "the data from numerous surveys of new methods among persons of all ages in many regions are entirely in accord in showing that deficiency states are rife throughout the Nation." Those of you who are interested in a detailed review of the available studies will wish to refer to this bulletin and to examine the evidence from which this conclusion was drawn.

From clinical assessment of nutrition we have reports from people like Dr. Spies, Dr. Jolliffe, and Dr. Wilder as I have mentioned. These three workers have been particularly interested in studying a deficiency of the B-vitamins and in improving techniques for diagnosis and detection of such deficiencies. The Public Health Service also is very much interested in the training of their health officers in the detection and treatment of nutritional deficiencies. From Johns Hopkins University there comes a report from Dr. Park and his associates who made a histological study of the bones of over 200 children who has died in the hospital from a number of causes. Of 230 examined, 107 has some degree of rickets. In none of the children was diagnosis of rickets made during life. The authors stress the importance of guarding against rickets in children who are sick and the desirability of continuing vitamin D administration throughout the period of growth.

From indirect methods of approach we have rather conflicting evidence on nutritional progress in this country. Dr. Perrott in a statistical analysis of selective service examinations makes this rather discouraging comment--"Perhaps the most that can be said in comparing the rejection rates of the two wars is that there is certainly no evidence of any improvement in the physical status of young men since World War I." On the other hand, there is the very heartening report on the decline in the incidence of pellagra. In 1938 nearly 15,000 cases and over 3,000 deaths were reported to the Public Health Service. There has been a consistent decline until in 1943 there were about 5,000 cases and 1,300 deaths. It is understood that these figures refer only to the cases that are reported and that there are probably many hundreds that never see a doctor or are unrecognized. There have been several studies recently to indicate that we are rearing bigger and better children today than we did 20 years ago. Among the more recent reports I have seen is one comparing the measurements of Mt. Holyoke freshmen with those entering the same college in 1918. For each of six measurements reported the arithmetic mean for 1943 exceeded that for 1918. You might be interested in seeing the magnitude of these differences. In 1943 freshmen averaging 17.9 years of age were three centimeters taller and 10 pounds heavier than the group in 1918 who averaged 18.4 years of age. The lung capacity was 3.2 liters in 1943 as compared to 2.6 liters in 1918. Similarly there were increases in each of three measurements of grip in the 1943 group.

A study by what I have called the "deduction" method was made by Miss Harrell in a well-run children's orphanage. Two groups of children, as comparable in every respect as it was possible to make them, were set up for purpose of the study; one group had an additional amount of thiamine added to the regular diet, the other group received a placebo. Neither the children nor the regular staff knew which ones were in which group. At the beginning and throughout the experimental period elaborate tests of all kinds (physical, psychological, and others) were made on the two groups of children. In the end the vitamin-B group proved to be superior in every respect according to statistically significant differences between the measurements of the two groups. The implication is that here was a group of individuals showing no apparent abnormalities and no reason to expect a thiamine deficiency and yet because of the superior performance of the children that had additional thiamine, it must be concluded that the thiamine intake had been too low.

What does all this add up to? As I see it, we have reason to believe that our nutrition today is at a high level compared to earlier years but that there are large groups having sub-optimal intakes of a number of nutrients and hence not enjoying the highest level of health and vigor, and that there are smaller groups probably having serious dietary deficiencies and corresponding low levels of physical well-being. It is impossible with the present state of knowledge to express these ideas in any quantitative terms as we could if we were grading diets alone.

However, I believe the outlook for the future is optimistic. If during the next few years economic conditions are good, we shall have continued high levels of food consumption associated with adequate incomes. If we go through another slump, I think we might expect better nutrition for the vulnerable groups in our population than in any previous depression partly because of a greater degree of social responsibility for health and well-being and partly because of the educational program that has reached so many people. The developments that have occurred in the school lunch program and in industrial feeding will probably remain whether we have prosperity or depression. We shall hope for intelligent use of food surpluses if they exist. Another wartime feature which probably will be continued is the Victory garden program. For thousands of urban families who have learned the pleasure of eating vegetables fresh from the garden, there is the added nutritional advantage of conserving some of the vitamins that might be lost in storage and commercial marketing.

As a result of research we can look forward to a better knowledge of human requirements and food composition; to improved methods of assessing nutrition including refinements in dietary surveys and more rapid and precise laboratory and clinical tests; and to a fuller interpretation of their meaning. Plant breeding and animal feeding offer opportunities for increasing the nutritive value of food products. There will undoubtedly be greater conservation of food values through improved marketing and processing methods.

Hand in hand with these developments we need to maintain a continuing program of nutrition education which will convince people that food makes a difference and will help them know how to obtain the kinds and quantities needed.